

COAL MINING

MAY, 1952

VOLUME 29, NO. 5

When you say *Highway*
you're right!



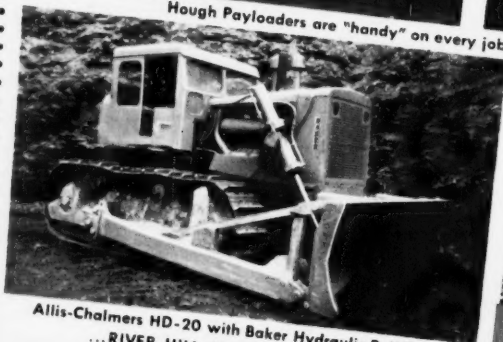
Lima Model 805...W. G. MOORE & SON, Houtzdale



Hough Payloaders are "handy" on every job...handle 1,000 plus one tasks quickly and economically.



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Drilling rigs,
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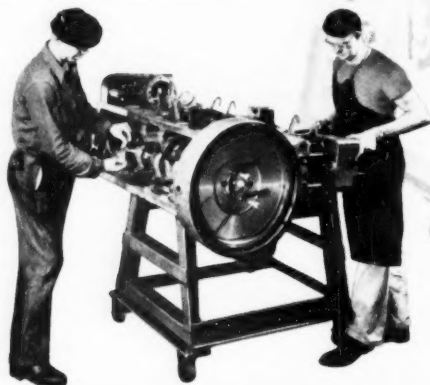
Work boats, pleasure craft

Lightweight, high-speed Diesels (30-350 hp) for these and many other uses

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Rugged, lightweight, high-speed Cummins Diesels are at work everywhere. Each engine is built *twice*. It's assembled, run-in tested, disassembled and inspected, then reassembled and tested again. This extra care in building, plus Cummins exclusive fuel system and an efficient and expanding service and parts organization, means minimum "down time", more power and profits for the user. See your Cummins dealer.



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● McCarthy Coal Recovery Drills put new profit in worked-out strip mines by recovering clean lump or slack coal without disturbing overburden.

The drills bore horizontally into the heart of the exposed seam to pull out continuous streams of coal from depths of 100 feet and more.

Cost of this operation varies between \$1.50 and \$2.00 per ton, including amortization of investment. A three-man crew can handle the entire job, including loading.

Rate of recovery depends entirely upon operator skill, bench width, seam thickness and diameter of auger used.

Near Salineville, Ohio, three men, using a single McCarthy Drill equipped with 24-inch augers, get out 90 tons of coal daily. The same number of men, working for the Bruns Coal Company, near Germano, Ohio, use 36-inch auger sections to produce 167 tons per day.

We suggest you write today to determine which of four standard models is most suitable for your requirements.

McCarthy hydraulically controlled Drills are available with 4 to 24-ft. interlocking-auger sections in 20, 24, 30, 36, 42 and 48-inch diameters. Jacks are power operated with power supplied through gasoline, diesel or electric units.

Make it a point to investigate this economical new method for recovering coal right now.

McCARTHY
New 36" Recovery
Drill; weight 9,700 lbs.

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Powerful
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McCarthy Auger Hoist makes easy the handling of individual auger sections to allow fast operation in or out with minimum physical labor.

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Individually power operated jack legs for elevation adjustments permit McCarthy Drills to readily conform to uneven bench levels. Sensitive controls permit accurate height selection down to 1/8" adjustment.



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methods of saving money and new automatic
welders are installed to rebuild your worn

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and critical parts — a new automatic, submerged
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"like new" condition. The renewing process adds
hundreds of work hours to your equipment. Call
the service department at our branch near you
and schedule your parts rebuilding!

parts . . . bid a job and our sales engineers are ready to

recommend equipment to do it . . . buy a machine and

our parts department immediately orders parts to

back it — your wishes are our command for with

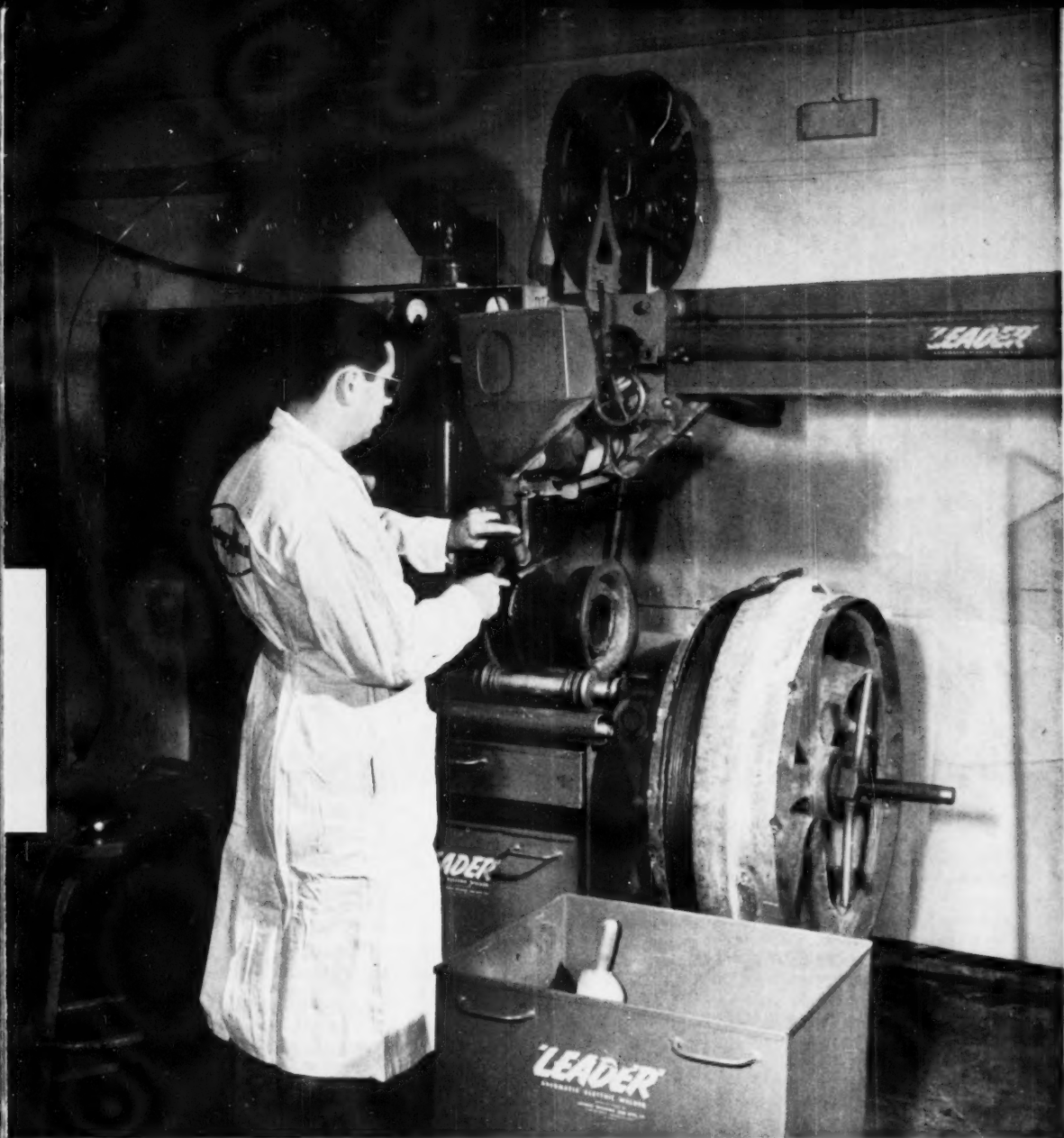
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TORQUE CONVERTER



Adding a torque converter, electric shift, and electric steer control, to 19 m.p.h. Tournadozer is another development to help you move dirt faster and at lower costs. With these additional features Tournadozer becomes an even greater producer on high-speed pushing, pulling and dozing assignments. The single-stage torque converter is a simple, trouble-free type, which combines the advantages of a hydraulic torque converter and a fluid coupling. Teamed with the constant mesh transmission, it provides an infinite speed range from 0 to 19 m.p.h., and automatically selects the proper ratio for delivering maximum power in a steady, even flow to Tournadozer's wheels. This enables the engine to operate at maximum r.p.m. and at highest efficiency. Torque converter absorbs practically all shock-loads between engine and drive wheels . . . adds efficiency . . . means more work done dozing, climbing grades, pulling through mud, snow, ice, sand. It improves performance in any type of difficult operation, increases accuracy in holding cuts to grade and in close finishing.

Combining low-pressure, 21.00 x 25 rubber tires and constant-mesh transmission with torque converter, Tournadozer

gives you the smoothest running dozer you've ever seen! You get instant speed selection at the touch of an electric switch . . . no delay . . . no de-clutching or loss of vital momentum for shifting gears.

Wheel speeds are automatically adjusted to give you maximum power delivery in gear range selected, thus eliminating shock loads or need for frequent gear change. With 4 forward speeds, 2 reverse, plus torque converter, you get an infinite speed range with most effective use of power over every foot of the way. This constant, smooth power, always available contributes to increased output plus lower maintenance and longer machine life.

Check all the advantages you get from new torque converter, plus the new electric shift and steer control, which combine to make Tournadozer by far the fastest, most efficient dozer money can buy. It will pay you to contact your LeTourneau Distributor . . . he'll be glad to show you how these advantages help Tournadozer to do more work on all your jobs per hour . . . per day . . . per year.



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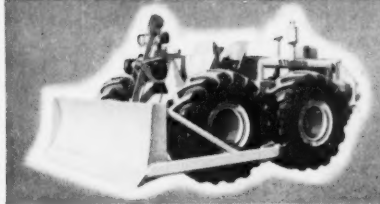
makes **TOURNADOZER** even greater producer

TORQUE CONVERTER

gives you all these advantages

- 1 Smooth acceleration**—infinite speed range 0 to 19 m.p.h., more work done on the level, up steep grades, or in soft going.
- 2 Better traction**—steady pull of smooth flowing power gives big, low-pressure tires a firmer grip in tough footings to pick up and carry bigger loads without slippage.
- 3 Longer tire life**—peak loads in tire acceleration are eliminated, giving better wear, longer, more economical service.
- 4 No shock or vibration**—shock loads of sudden speed increases are absorbed in oil of torque converter and eliminated from transmission and entire power train.
- 5 Higher engine efficiency**—constant horsepower cuts down engine wear . . . eliminates lugging . . . reduces maintenance expense . . . adds to engine life.
- 6 Steady engine speed**—assures maximum voltage to electrical equipment . . . improves service and life of engine attachments.
- 7 Accurate grading**—smooth, perfect balance of torque against load gives accurate control of blade at all times.
- 8 Single-stage torque converter**—simple and trouble-free . . . not dependent on seal efficiency for converter efficiency.
- 9 Easier operation**—smoother performance throughout cycle increases operator efficiency . . . boosts your production.
- 10 More yards per hour**—use of maximum engine horsepower gives higher average speed, higher ratio of operating efficiency, more work done.

Check additional attachments available below



Down pressure blade (optional)—now available, assures quick positive penetration in wet frozen sand, clay, hardpan, other hard materials. Electrically-operated PCU, plus short-coupled cable gives fast, smooth blade control.



Angledozzer—simplifies side-hill work. 13' x 41½" blade can be angled 20° right or left . . . is easily interchanged with standard bulldozer blade. V-type snow plow also available for smashing big drifts, extra winter earnings.



Logging winch—exerts 67,000-lb. line pull . . . plenty of power for any winch application. Push button controlled and powered by two 2-speed electric motors. Big sheave fairlead permits pulls to 90°. Taps for heavy skidding!

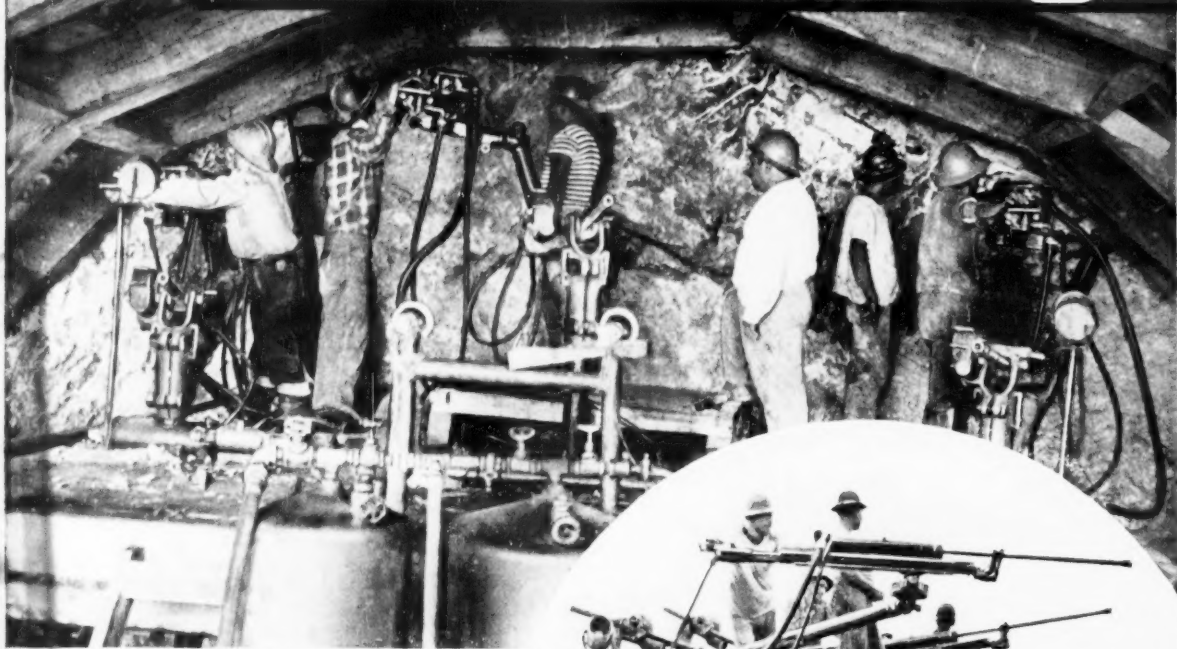
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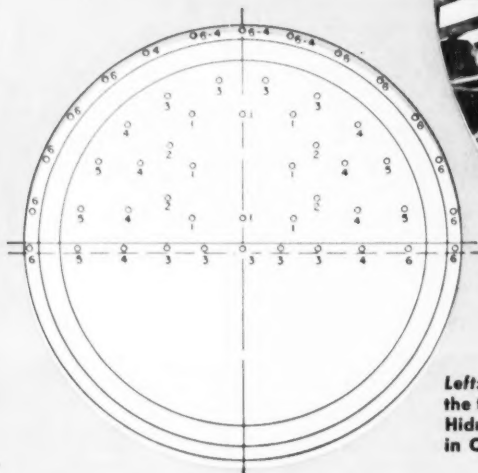
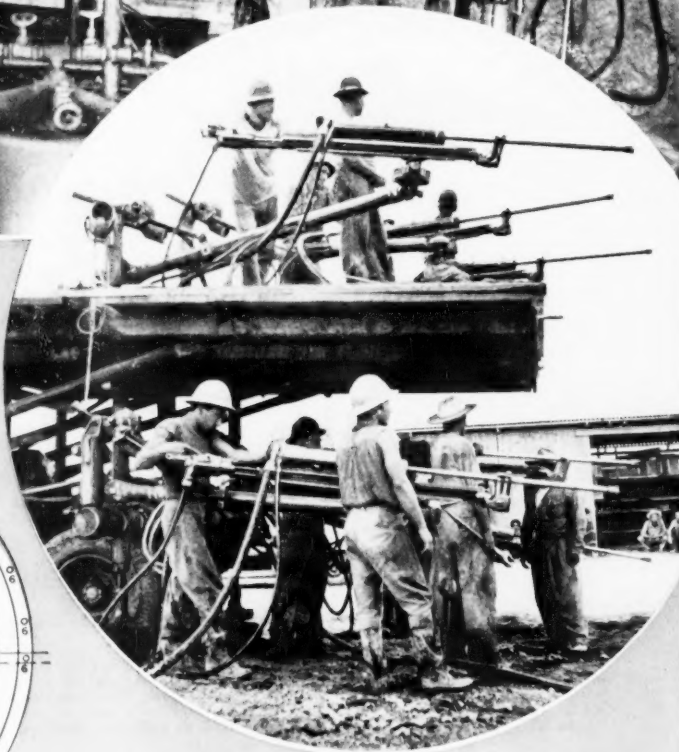
STATEWIDE EQUIPMENT CO.

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307 North Avenue, CLARKSBURG, W. VA.

Tunneling



Right: Six-drill jumbo with Le Roi-CLEVELAND power feed drifters and air-motor booms on a 1½-ton truck. 1¼" round-lug steel and 2" carbide bits. Air supply — two 500 cfm compressors.



Left: Standard drill pattern for 50-hole round. Typical of the top-heading and bench method used by Construcciones Hidraulicas, S.A. in driving three 27'-bore circular tunnels in Obregon, Sonora, Mexico.

costs reduced!

with Le Roi-CLEVELAND Drifters and Jumbo Booms

**You spot your holes easier —
get less overbreak!**

**You get higher drilling speeds,
for faster cycles!**

Better fragmentation! More footage per shift! That's the pay-off, when you use Le Roi-CLEVELAND Jumbo Booms and power-feed Drifters in your rock headings. The pay-off that means lower costs on any rock-drilling or tunneling job.

- Le Roi-CLEVELAND Jumbos are versatile. Air-motor powered booms let you spot and space your holes quickly and easily for the most efficient fragmentation. Their greater flexibility lets you keep the tunnel bore close to pay line — with little overbreak or underbreak.

- Rigid, non-slip set-up feature of Le Roi-CLEVELAND Jumbo Booms keeps drifters in line, prevents steel binding, saves wear and tear on chucks.

- Strong rotation of Le Roi-CLEVELAND Drifters — plus snappy, powerful force of blow — give you unexcelled drilling speed. Graduated feed throttle lets you adjust pressure to get maximum footage in any type of rock formation. Fast feed travel makes steel-changing quick and easy.

Get more drilling done every shift. Save the money overbreak steals from you. Put the versatility of Le Roi-CLEVELAND Jumbo Booms and the dependable drilling speed of Le Roi-CLEVELAND Drifters to work for you. Write today for complete information.

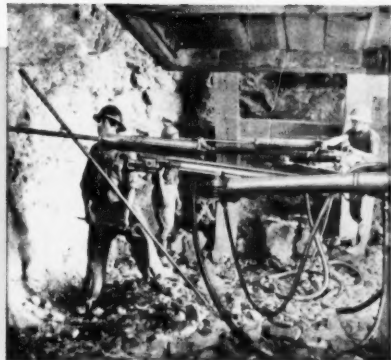


LE ROI COMPANY

CLEVELAND ROCK DRILL DIVISION

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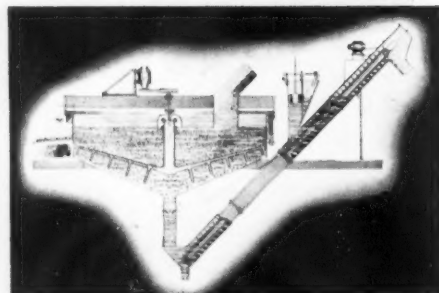
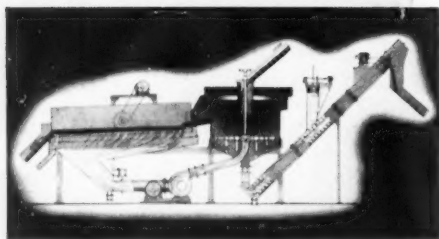
The seamy rock in one tunnel at Obregon required 9 sections of timber every 3'. To save time on timbering, the contractors used the Le Roi-CLEVELAND air-motor powered jumbo booms to raise the sections of timber from the top deck of the jumbo to the roof.



Tunnel No. 1 at Obregon is 2411' long; tunnel No. 2, 1378'; tunnel No. 3, 1850'. Tunnel bores were so regular one observer said they must have been cut with a knife.

FADS AND FACTS

ABOUT FINE-COAL CLEANING PROCESSES



So many fine-coal cleaning fads have come and gone in the past thirty years that it pays to investigate the facts thoroughly before you buy.

Here are some facts about Roberts & Schaefer Hydrotator Process acceptance—

1. The first fact is that the Hydrotator Process is *not a fad*; it's here to stay. The first installations on bituminous coal were made in 1942. They are still in operation at peak efficiency.
2. The number of Hydrotator installations has grown steadily, year after year. The current annual capacity of Hydrotator Process-Units in operation is 5 million tons.
3. On the basis of two years performance in two mines, a contract for Hydrotator fine-coal washing equipment for a third mine has recently been placed by one of the industry's largest operators.*

Here are brief facts about the Roberts & Schaefer Hydrotator Process—

1. Hydrotator Process equipment has unlimited layout possibilities, permitting you to fit it into any future preparation plans or into your present plant.
2. The Hydrotator Process is economical of space—gives you maximum output while using a minimum of floor space.
3. It is economical of labor, power and water.
4. The Hydrotator Process is completely automatic, simple to operate.
5. It compensates for changes in quality and quantity of intake—gives uniform results.

Next to installing Roberts & Schaefer Hydrotator equipment in your plant, the best way to try it out is to let us test a carload of your coal in our new testing plant near Chicago. Following such a test you receive a complete report of all important facts and figures. Write for full information about this valuable service.

*Name on request.



FURTHER FACTS about the Roberts & Schaefer Hydrotator Process and other Roberts & Schaefer wet washing equipment are contained in Bulletin No. 176. Write today for your free copy.

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COAL MINING

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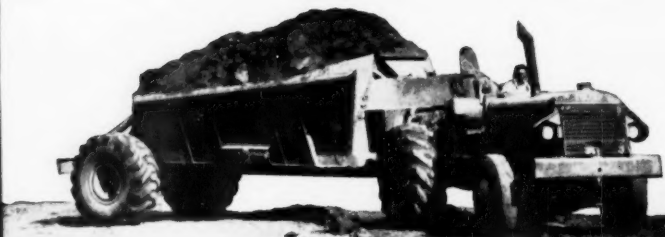
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FREEDOM-VALVOLINE OIL COMPANY
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OR BY THE TON..

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Haul More Loads at Less Cost!

Leading contractors and industrial users buy Euclids because they are job proved for high production at the lowest cost per ton or yard moved...and because "Eucs" are designed and built throughout for long, efficient service in open pit mines and quarries, heavy construction and industrial work.

There is a Euclid model to meet every requirement in off-the-highway work...and body designs for all types of materials. Their rugged strength and stamina have made "Eucs" the standard hauling equipment of many leading operators. The Euclid Loader is built to match the speed

and efficiency of other Euclid earth moving equipment. It is designed for use with the Euclid Bottom-Dump and other large capacity hauling units, and provides fast, mobile loading of practically any material.

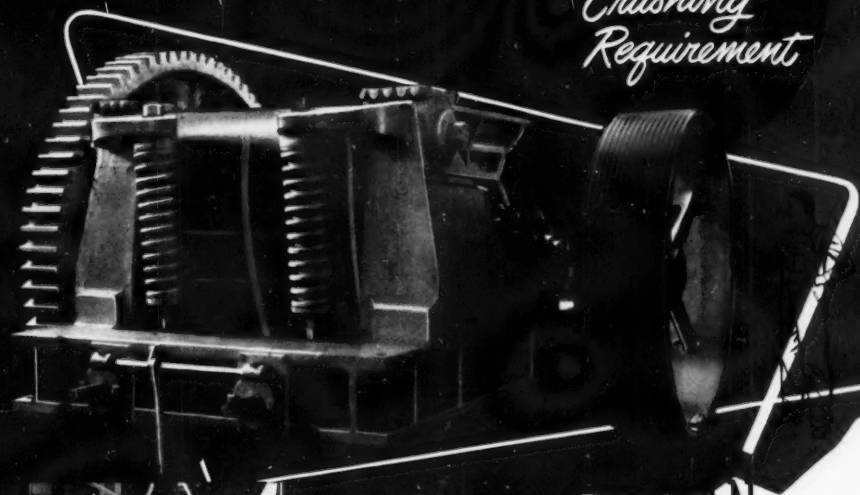
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The EUCLID ROAD MACHINERY Co., CLEVELAND 17, OHIO

EUCLIDS   *Move the Earth*

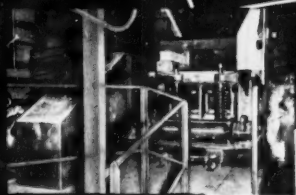
*Best for every
Crushing
Requirement*



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Single Roll

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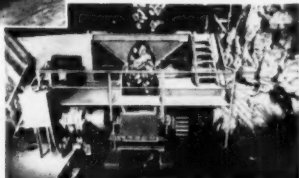


Used for
team mining.



McLanahan reciprocating feeder delivering limestone to a 10 yard dragline to a 60" x 60" Rockmaster in a quarry in northwestern Ohio.

In both primary and secondary crushing the Rockmaster gives a minimum of fines and flats in this Iowa mine.



Outstanding for both primary and secondary crushing, the Rockmaster produces a minimum of flats, dust and irregular sizes. Self-feeding and equipped with automatic tramp iron protection and quick adjustment, it will take a choke feed without jamming. In operation, the material is held against the crushing plate while it is sledged by the wedge-shaped teeth of the roll until broken and forced through the crusher opening. Interchangeable and reversible crushing plates and quick-change steel segment rolls contribute greatly to economy in maintenance. The Rockmaster has been thoroughly service-proved on limestone, iron and manganese ores, gypsum, rock, gravel, shale, slag and other materials.

McLANAHAN & STONE CORPORATION

Pit, Mine and Quarry Equipment Headquarters Since 1835

Hollidaysburg, Pennsylvania

Write for Bulletin RM-505

This 8-page bulletin includes dimensional drawings, capacity and horsepower data and technical details.

Do You Know?

● To speed the healing of a wound, whether in battle or in an operating room, the human body needs one particular chemical, a protein building block called cystine.

Dr. Martin B. Williamson, of Loyola University School of Medicine, Chicago, announced to the American Chemical Society here that without this amino acid chemical or protein containing it in the diet the wound will heal more slowly, stealing the chemical needed from other body tissues.

Experiments by Dr. Williamson and Dr. Herbert J. Fromm on rats, whose food could be controlled, demonstrated that wound healing is promoted by diet additions of cystine, or methionine from which cystine can be made in the body, or proteins that contain these substances.

● We will not necessarily have a shortage of engineers if the scope of the profession is enlarged.

This is the opinion of Dr. Vannear Bush, president of the Carnegie Institution of Washington, expressed at a meeting to celebrate the "centennial of engineering." The meeting was sponsored by the metropolitan sections of the five founder engineering societies, to mark the founding of the American Society of Civil Engineers.

"Many of our greatest engineers in the past," said Dr. Bush, "have come into the profession by unusual paths. There is no reason why we should not make engineers out of men from other fields if we need them, especially if they find among us a satisfying opportunity and they have the versatility needed for accomplishment under rapidly changing conditions. I think we can increase our numbers if we open up the unusual paths and if we regard the functioning of an engineer in a broader way than it is sometimes delineated."

Dr. Bush warned that, if the engineering field were not broadened, some of the more important, and more interesting, functions of the engineer might be taken over by the applied scientist.

In looking at a few specific fields in which a broader concept of engineering would be necessary, Dr. Bush pointed to agriculture. There, he said, extraordinary changes are due. The beginnings of cultivation in the sea in place of bare harvesting, new methods of reclaiming and fortifying land, the production of foods by biological processes, rainmaking, irrigation and pest control are all areas where vital changes are taking place, he told his audience. And these things are only a part of the broad application of biology.

Study of the mechanism of the muscle, which can transform chemical energy directly into mechanical energy, new uses of chemical engineering tools, automatic controls in industry, new fibers and plastics — in all these areas vast changes will take place, Dr. Bush said.

In order for the engineer to maintain his rightful place in this changing world, Dr. Bush said, he must understand science on the one hand and people on the other. He can do this adequately if he has the right sort of mind, together with courage and vision.

Here and There in the Coal Industry

Newell G. Alford and J. B. Morrow announce formation of the firm of Alford, Morrow & Associates, consulting engineers, coal mining, preparation, property valuations, prospecting, development, mapping. They will maintain their offices in the Oliver Bldg., Pittsburgh 22, Pa.



J. B. Morrow

Judge Fred G. Wolfe of the Knox County (Ill.) Circuit Court in a decision dated January 9, 1952 held a Knox County zoning resolution unconstitutional as it relates to regulations, restrictions or prohibitions of the use of land for the recovery of coal by the open-cut or strip method.

The court found that the county resolution violated the 14th Amendment of the Constitution of the United States, and Sections 2 and 14 of Article II and Section 22 of Article IV of the Constitution of Illinois of 1870.

In addition to the general findings, Judge Wolfe with reference to the property of Midland Electric Coal Corp., the plaintiff, made the same findings specifically and permanently and peremptorily enjoined the county from enforcing or carrying out or attempting to enforce or carry out any of the provisions of the zoning resolution.

Officers of the Pocahontas Operators' Association for the ensuing year are as follows: William Beury, President; H. R. Hawthorne, Vice-President; Henry Warden, Treasurer, and B. B. Housman, Secretary. The Executive Committee elected by the organization comprises Messrs. William Beury, H. R. Hawthorne, Henry Warden, James A. McQuail, Roland C. Luther, John Foster, W. W. Walker and A. R. Matthews.

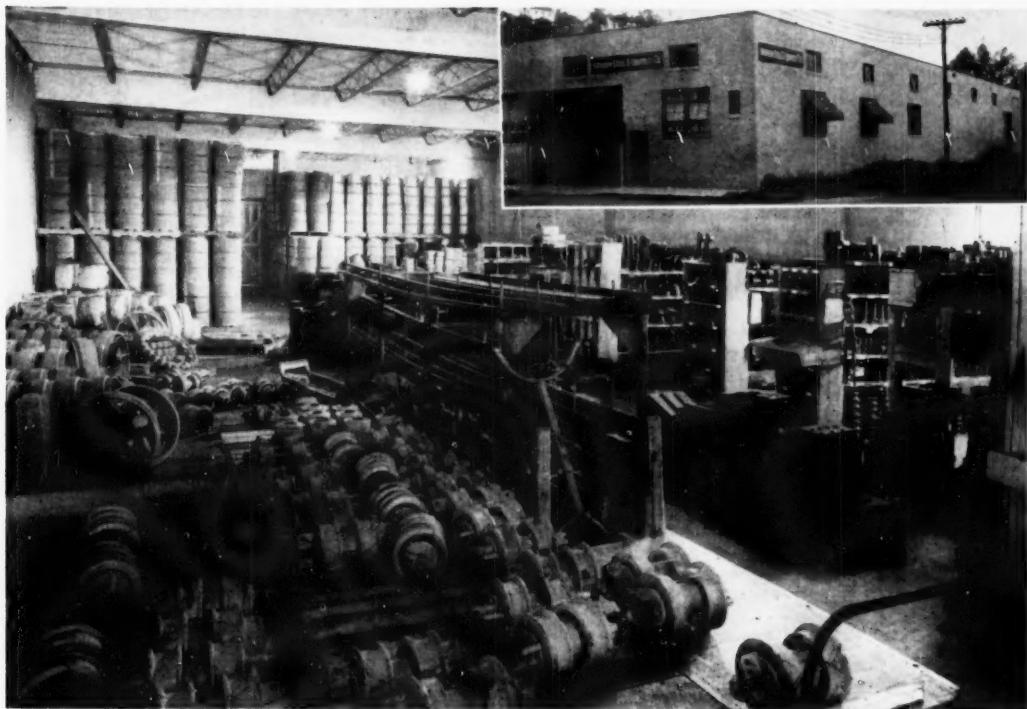
The Tenth Anniversary meeting of the Fairmont, West Virginia Coal Bureau was held recently. This meeting was attended by representatives of 21 coal companies and 8 railroads.

Members of the Management Committee, all of whom were re-elected, are: A. C. Spurr, president of Monongahela Power Company, (chairman); Frank R. Amos, Pittsburgh-Consolidation Coal Company, (counsel); D. T. Buckley, Eastern Gas and Fuel Associates; E. C. Payne, Pittsburgh - Consolidation Coal Company; Ralph E. Jamison, Jr., Jamison Coal and Coke Company, and Thomas Courtney, The Valley Camp Coal Company.

Mr. St. John Reynolds of Knoxville, Tenn., was elected president of the Holmes-Darst Coal Corp. Mr. E. P. Avent, of Cincinnati, Ohio, was elected vice-president and director.

Robert F. Duemler was elected vice-president of the West Virginia Coal & Coke Corp. with headquarters in Cincinnati.

Mr. Frank H. Woods, Sr., chairman of the board of directors of the Sahara Coal Co., Illinois, died at the age of 84. He is survived by two sons, Frank H. Woods, Jr., and Henry C. Woods, both of whom have been directing the Sahara Coal Co.



Equipment for Coal Strippers

NOW—A new, nearby source of supply for coal strippers located in western Pennsylvania, eastern Ohio, and the northern panhandle of West Virginia.

Substantial Stocks of Parts Ready at All Times

ELECTRIC STEEL FOUNDRY COMPANY — ESCO parts for ESCO dippers and dragline buckets. ESCO adapters (two part teeth) for all makes of dippers. ESCO cast manganese cutting edges and alloy steel blade ends for all makes of dozers.

TAYLOR-WHARTON IRON & STEEL COMPANY — TISCO cast manganese steel teeth for all makes of shovel dippers. Repointers and point bars for rebuilding teeth. TISCO crusher jaws. TIMANG welding rod.

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Prevention and Control of Fire Hazards in Belt Conveyor Installations*

By GEORGE H. SAMBROOK

Director of Mine Inspection, United States Steel Co., Pittsburgh, Pa.

More coal is transported by belt conveyor systems today than ever before in the history of the coal industry. As a result, the prevention and control of fires in their use has assumed a place of vital importance in the protection of life and property.

When coal was transported by animals there was practically no danger from fires. Then industry changed to motor transportation which resulted in some fires, but they were more easily controlled as the motor and electrical systems were protected by automatic breakers and fuses.

At present, however, with coal being transported by belt conveyors made from highly inflammable rubber which can be readily ignited by friction, together with other causes, the fire hazard has increased greatly.

There are two major types of belt conveyor systems:

First, the permanent system, which hauls the coal from the main dumping point to the surface. The belts are usually of various lengths, some belts running from a rotary dump located in the coal seam, with the belt extending through a rock slope to the tippie. Others may run from a main dumping point underground and extend through the mine for a distance of several miles before reaching the main loading point.

The second type is the gathering or room and entry system.

This type of system transports the coal from sections of the mine and dumps it onto a mother belt which in turn discharges it into mine cars.

From a fire hazard standpoint a belt conveyor system requires careful consideration of the type of equipment to be used; and the correct installation, inspection, and maintenance of this equipment. The electric motors, junction boxes and switches should be of the permissible type. A belting of flame resistant qualities such as neoprene would be most desirable. Considerable work along experimental lines is now being done with the

use of steel as belting to be used in mines.

Of the two belt-conveyor systems, the permanent belt is usually a much better installation, and there is much less danger of a fire. Permanent conveyor structure should be supported by steel or concrete, lined and leveled by engineers, thus properly training the belt. If the belt is not leveled and lined it will run to one side or the other, thus requiring belt guides for control to make the belt follow the rollers. Any unevenness in the run of the belt becomes a fire hazard.

Gathering belts are usually installed with less attention being given to proper training of the belt, causing undue belt friction and possibilities of a fire. In too many instances, the job of installation of gathering belts is not done as thoroughly or completely as in the permanent belt installation. The installation is not expected to be used for any great length of time, so a more casual attitude is taken in its installation. This results in a very inferior job and greatly increases fire hazards.

A fire caused from a small gathering belt system is as dangerous and can cause as much property damage as a fire caused from a permanent conveyor system.

One cause of belt fires, the failure of bearings, may be minimized by installing a centralized lubricating system or permanently sealed bearings. The latter eliminates the danger of bearings running dry and becoming over-heated. It also prevents leakage of oil and grease which becomes a very dangerous fire hazard when mixed with fine coal.

There should be a regular inspection of the rollers to see that they are turning and not running hot. They must be greased or oiled at definite times. They must at all times be free of grit and other foreign substances which might cause undue friction when the belt is running.

If accumulations of oil or grease are allowed around rollers, and if

for any cause the rollers fail to revolve, the belt will immediately start to generate heat and may ignite the oil and fine coal accumulations, causing, in a very short time, a fire.

A careful check-up should be made on the length of time rollers may be used. This may be done by carefully noting the length of time former rollers have been safely used before becoming worn enough to discard. Additional information may be gained from the manufacturer and from a study of the type of bearing that is installed.

Electrical installations, with proper maintenance thereof, should be given special attention, as they are the source of many belt fires. The motor and electrical cables should be of sufficient size to carry the maximum load. If the cables are too small to carry the load, they will heat and may cause a fire. The cables should be insulated and supported by insulators and not touch any other object.

Fuses or circuit breakers should be of capacity that will protect the electrical system from short circuits or over-loads. The belts should be wired so that if for some reason a belt stops, all other belts in by the stopped belt would stop immediately. If for any reason they continue to run, they will discharge a pile of coal, resulting in friction, which creates a fire hazard.

Poor electrical ground connections are another cause of fires. Ground connections should be checked to see that a proper ground is furnished.

The practice of plugging or wiring around fuse plugs or over-load switches is one that should not be tolerated for any reason, as the effectiveness of the electrical protection is lost in this manner.

This practice is sometimes used to save a few minutes when no fuse is immediately at hand or the circuit breakers, for some unknown reason, will not stay closed. There is quite a tendency to resort to "plugging." These time-savers might save a few minutes at the particular point or gain a few extra tons of coal on any particular

*Presented at the Annual Meeting of the National Safety Council



More than 3,000 persons saw George H. Deike, president of Mine Safety Appliances Company of Pittsburgh, Pa., present the Mine Safety trophy to members of the winning team in the ninth annual Championship First Aid Contest sponsored by the Pennsylvania State Bituminous Safety Association and held at the Cambria County Fair Grounds Arena in Ebensburg, Pa. The team, from Republic Steel Corporation's Indianola mine, scored 99.85 to win over 34 other teams from central and western Pennsylvania. Teams were scored on speed and effectiveness in handling simulated mine accidents. Eastern Gas & Fuel Associates' Melcroft mine team placed second with a score of 99.6; third place went to the team from Pittsburgh Coal Company's Westland mine which scored 99.55. The winners, shown above with Mr. Deike, are l. to r., Vince Stanek (captain), Robert Miller, Arthur Starnes, George Walker, Paul Yeloushan, Uriah Proser, and George Cingle.

shift, but if carried on for any length of time, will eventually result in a fire with a probable loss of life and equipment. When a circuit is subjected to an overload the motors and cables give way at the weakest point. Fire resulting from a cable or motor failure is usually a very hot one.

A roller switch is adaptable for use on practically any belt conveyor. It is installed at or near the head section to protect the belt, or at any transfer point along the line to control feeder conveyors. It is driven by the conveyor belt and is adjustable for operation at any speed within the minimum and maximum range.

Contacts in the centrifugal type switch coupled to the roller of the switch are opened and closed automatically at the predetermined belt

speeds. The switch will operate when turning in either direction and may be installed on either side of the conveyor. However, when installed for use with feeder conveyors it must be wired for forward direction only.

The switch can be wired to any magnetic type controller and has a definite operating range. Should the belt speed fall below a predetermined point the contacts of the switch open and power is automatically cut off. This affords protection against excessive belt slippage at the drive pulley which causes undue belt wear and may result in a belt fire.

When a belt is loaded beyond its rated maximum carrying capacity it places a strain on the drive motor and electric wiring. If this over-loading continues for a period

of time, the insulation will heat and eventually fail, causing a short-circuit of the electric motor or cable. There is a commercial device available which may be placed under the belt to cut off the power when the belt is loaded beyond a predetermined capacity.

A slate fall, due to the lack of adequate roof protection is another cause of belt fires. Roof protection of permanent belt installations is usually done in a workmanlike manner. Quite often the roof is supported by steel timbering and lagging. In other cases, masonry is used.

If these types are not used, workmanlike jobs of wood timbering or roof bolts may be employed. Thus careful attention to roof protection results in a minimum danger of fires from roof hazards. Usually

a main belt installation is traveled by more workmen and is inspected at more frequent intervals than the gathering belt systems. This results in detection of loose or dangerous roof conditions before a possible fall occurs.

The roof protection of gathering belts does not usually receive the same careful attention as that of permanent belts. Permanent belts usually transport the entire output of the mine, while the gathering belt, in most cases, transports only the coal from one section of the mine. It is, therefore, a natural economy to use a minimum amount of protection over the belt. Fewer workmen travel gathering belts, with a subsequent failure to immediately become aware of hazards. If doubtful roof conditions exist over a gathering belt, there is an inclination to neglect their immediate repair.

If the roof is allowed to fall there is a chance that the electric wiring may be torn down which cause a short circuit or a possible fouling of the belt. Either of these might result in a dangerous fire.

The maintenance and inspection of the belt is a must.

There is always danger of fires in belt conveyor installations caused by friction at the drive pulley or at rollers along the length of the conveyor. A fire at a roller may be caused by the rotation of the roller while rubbing against a piece of wood or material at only a small area of contact.

This may ignite any fine coal dust in contact with the hot surface and lead to a smoldering combustion, which may sometime later set fire to the belt. The detection of such a condition is a hard one, and stress must be placed on the need to prevent contact of the roller with foreign bodies and of avoidance of accumulation of coal dust and grease around the rollers.

A check must be made of the belt to see that there are no tears or breaks in the belting. A loose piece of belting might stall the belt or one of the rollers while the driving pulley continues to rotate, thus creating sufficient friction to start a fire. This hazard may be eliminated by cutting out any worn or torn spots and splicing in a new section of belt, or by vulcanizing the worn or torn spots.

The adjustment of the belt must be checked regularly for tightness. Slippage at the drive rapidly generates an excessive amount of heat.

To minimize the abuse of the belts, attention should be paid to the distance the material has to

drop from one belt to the other. Care must be taken that excessively large pieces of coal or slate are not loaded on to the belt, and that scrap iron is not loaded at the face, which might be carried along with the coal from the loading point, cutting or fouling the belt with a resulting serious damage or fire.

Belts or rollers must not rub against or contact stationary objects such as posts, slate piles, door frames or the like. If the belt rubs against any stationary object it may be on fire in a short time.

Cleanliness is a very important function around a belt installation. Grease and fine coal should be controlled around drive motors, head and tail pulleys and at transfer stations where the coal discharges from one belt to the other.

The spot at which fine coal accumulates around rollers and pulleys is one of the most difficult places to keep clean, and a steady clean-up program must be maintained to prevent belt fires from this origin.

One of the main points to keep clean is underneath the belt carriage. This should be checked frequently as it is a very difficult one to see and clean and one which workmen have a tendency to miss. The accumulation of grease and fine coal under the return rollers and belt becomes a fire hazard.

In order to clean this area efficiently, ample clearance should be provided on each side of the belt to allow workmen sufficient space to perform their work.

Control of coal dust plays a very important part in the prevention of coal fires.

The initial defense is rock dust. The belt heading should be kept clean at all times and a very liberal coating of rock dust should be distributed over the floor. Bags of rock dust should be stored in quantities at all drive motors, discharge points, tail pulleys and at frequent intervals along the belt line.

Fire extinguishers likewise should be placed at discharge points, drive motors and at least one should be placed at the working face of each unit. These can be employed to great advantage in extinguishing a fire if used immediately upon its discovery or before the blaze has made headway. At or near these locations there should be available protective equipment, such as all-service gas masks or Chemox for men fighting the fire.

Water is the principal means of allaying dust. Dust is produced by many operations in the mining of coal. At the face, the cutting, blast-

ing and loading of coal produces large quantities of dust unless water is used through the cutter bar of all cutting machines and on the head of loading machines. The cut of coal after it is blasted should be sprinkled.

The importance of fire fighting equipment along a belt system cannot be over-emphasized. A water line should be laid along all belt lines. It should be of sufficient size to deliver a minimum of one hundred gallons per minute through a 2½ inch hose connected to a ¾ inch nozzle. The water taps should not be further apart than the distance the intervening hose will reach.

Telephones, as of now, are the only satisfactory means available for communication with men who may be trapped back of a belt fire. It, therefore, becomes very necessary to have telephones at strategic locations as determined by the local management.

At this point it might be well to mention the use of self-rescuers as a means of escape for men trapped by smoke. There are now available on the market self-rescuers approved by the Bureau of Mines that are designed primarily for storage at convenient locations where they would be readily available.

All permanent belt installations should be on separate split of air. This minimizes the danger of smoke being carried into the working sections and endangering the lives of the workmen.

The extension of this same principle to gathering or room heading belts is more difficult of accomplishment, but can be of lesser importance only because of the generally shorter distances involved. Good practice demands that these belts should not be on the main intake air current, in order that the men may have a means of escape through an intake heading that is independent of the belt heading in the case of fire.

To provide this independent heading a row of stoppings must be placed on each side of the belt heading and a regulator established on the inby end to control the amount of air flowing over the belt. However, it is recognized that, because of the large volumes of air required, the accomplishment of this objective may be overloaded airways beyond practical limits under some plans of mining, particularly in the thinner seam mines.

A careful scrutiny of the general mining plan is warranted in this

(Continued on Page 22)



Overall view of the new McCarthy 36 inch highwall coal drill in operation.

Operating Experience With The McCarthy Coal Recovery Drill

Originally our first Coal Recovery Drills were converted McCarthy High Wall Drills. Instead of using 6" augers for blast hole drilling, 12", 16" and 20" augers were

used to recover coal by building in a jack shaft in the frame of the drill. The satisfactory results soon proved the necessity for Coal Recovery Drills designed for the job.

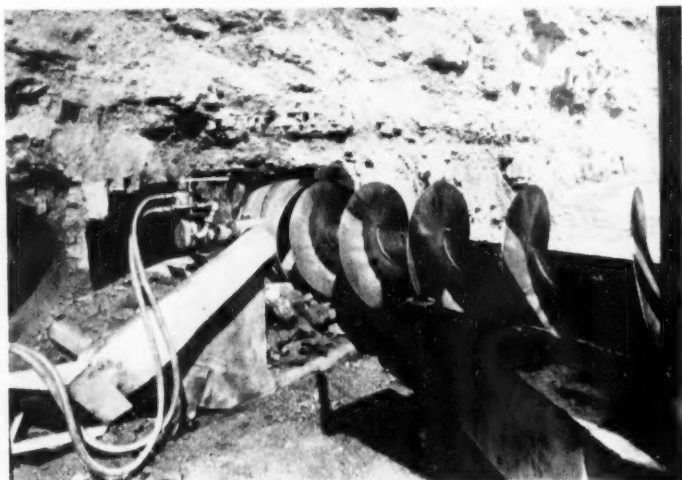
Now we have developed a complete line of drills for recovering coal and other minerals in strip pits and deep mines. Our line of drills today includes the following machines



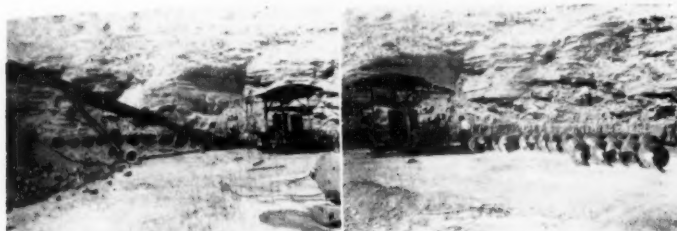
Close-up view of the conveyor and auger drilling unit. Note large lump coal at bottom of the pile. The auger unit is 32 feet long, 18 feet high and 8 feet wide. It is raised and lowered by hydraulic jacks in each of the four corners. It is powered by Diesel engine. Overhead hydraulic hoist handles five 21 foot long augers. The unit moves on skids, pulled by wire and chain block, attached to dead man pinned in bottom. Two unit moves are made to each skid move. Holes have been made as much as 120 feet deep, in 45 minutes, producing 40 tons in 50 in. Pittsburgh seam coal. The coal falls onto drag conveyor which pivots from small pan conveyor operated by one gasoline motor through hydraulic pump and motor.



Stripping and coal loading operations at the Crescent Valley Coal Company.



Close-up view of the drilling head and auger and pan conveyor that handles the coal.



Two views of a McCarthy 30-inch auger unit operating in 40-inch Ohio 8-A seam coal at the Crescent Valley Coal Company near Flushing, Ohio.

for open pit drilling:

1. A 20"-24" drill
2. A 30"-36" drill
3. A 42"-48" drill

The standard equipment for these drills is 6 foot augers. Although we produce drills using 12 foot augers and 24 foot augers wherever the bench of the strip pit is wide enough for the longer machines.

Underground auger mining is now being developed thoroughly. Results of open pit drilling proved to the underground operator the possibilities of auger mining. It has several uses underground, viz:

1. Auger mining entire areas (especially where the roof is bad and the coal is good)
2. Recovery of pillars
3. Advancing entries
4. Drilling air courses and break-throughs

The power for our Recovery Drills can be gasoline motor, Diesel engine or electric motor, as determined by the customer. We find that the same horsepower of Diesel motor and electric motor will out-perform the gasoline motor because they can be of lower speed and higher torque. The power required to operate the various size drills is proportionate to the square of the radius of the auger, in the same kind of coal. There are other variables, viz: The hardness of the coal, the sulphur impurities and

(Continued on Page 21)



Left: Dick Johnson, Mine Safety Appliances Co.; Seward Funk, Mine Foreman, Republic Steel Corp.; Charles W. Connor, Solid Fuel Administrator, Washington, D. C.



Left: R. M. Monteith, Safety Director, Weirton Coal Co.; B. H. Mills, Safety Inspector, U. S. Steel Mines, Lynch, Ky.; and Jack Boyle, Safety Inspector, U. S. Co., Robena Mine.

The 65th Annual Meeting of the Coal Mining Institute of America

The annual meeting of the Coal Mining Institute of America was held for the 65th time. This year at the Wm. Penn Hotel in Pittsburgh, Penna., December 13 and 14.

The Annual Banquet was the biggest affair of this meeting and was held in the Ball Room of the hotel on Thursday evening. The Banquet was presided over by Mr. G. A. Shoemaker, President of the Pittsburgh Coal Company and President of this Institution in



J. J. Snure, Production Manager, Rochester & Pittsburgh Coal Co., was Chairman of the Friday afternoon session.

1951. Robert T. Laing, Executive Director, Central Pennsylvania Coal Operators Association, was the Toastmaster at the Banquet. The principal talk of the evening was given by Harry M. Moses, President, Bituminous Coal Operators Association, Washington, D. C. His subject was "Labor Contracts in the Coal Industry."

Founded in 1887 at Monongahela, Penna., the purpose of this institute is "to foster the increase and



Left: Ralph Beerbower, Pittsburgh Branch Mgr., Goodman Mfg.; James Reilly, Vice-Pres., Hanna Coal Co.; L. E. Young, Consulting Mining Engineer; J. E. Elkin, Gen. Supt. Coal Mines, Duquesne Light Co.



Left: E. E. Helm, V-Pres. Sales, Reliance Electric & Engineering Co.; C. E. Hugus, Jr., Supervisor of Mining Applications, Reliance Electric & Eng.; and W. T. Fane, Asst. Chief, Health, Safety Dept. U. S. Bureau of Mines.

diffusion of knowledge relating to coal mining, to encourage education in practical and scientific mining, to promote study and research into mining problems and to advance the mutual interest of its members."

Like all institutes of this nature papers have been presented at the various sessions and more than half of them will be reproduced in COAL MINING because of their timely appeal, and because the subjects discussed will be applicable when the newer methods of mining will come into being.

"To encourage education in practical and scientific mining, to promote study and research into mining problems," are the vital points, at the moment, of the purpose of this or any other mining institute. That is not being done to the full extent of the possibilities of this or any other institute. Considering the many and comparatively easy possible improvements in automatic operation of mining machinery at the coal face. The present operating personnel in our industry is asleep.

On this earth there is a universal law, older than life itself, the law of change. Nothing stays the same whether it be inanimate or animate matter.

Change, emergent or progressive evolution, in humanity is defined as



Joseph Pursglove, Jr., Vice-President, Research and Development, Pittsburgh Consolidation Coal Co., outlined market prospects for coal in the future.

change in direction of increase in range and variety of adjustment of organism to its environments.

Compared to the long stream of human and prehuman racial history, not only individuals but social institutions and governments are short lived, but humanity marches on.

Man acquired capacity for making rapid changes in behavior, capacities for acquiring new responses and behavior patterns and discarding old ones as new situations arise. Man is the only talking animal. He is the only tool maker, the only animal capable of building into his own experiences the wisdom of those who lived before him. These unique achievements, acquired through long suffering, give man undreamed of mastery over nature. Human civilizations are produced by difficult rather than by easy conditions. Man has achieved

his present status by responding to challenges in situations of difficulty which made him make unprecedented effort.

We now have electronic gadgets that seek out targets in guided missiles. One such gadget keeps the travelling missile on dead center. Should the missile drift from its beam, radio or radar signals work its control to bring it back on course. In another electronic "command guidance" system of control a radar station on the ground tracks the target as the missile rides a separate beam. An automatic computer links the two beams and figures the path the missile must travel to hit its target. Still another, and the most intelligent, is the "homing system" of electronic guiding. In this system a missile rides a ground-directed wave into the vicinity of the target, then a transmitter within the missile switches to a signal echoed from the target and directs the missile to the target.

The paragraph directly above outlines more of the automatic devices described in this paper over the past 15 months that could be incorporated in mining machines to make them work automatically at the face. Putting it another way: we can have automatic mining on longwall face today—now—if we want it. The reason we do not have it is because nobody wants it badly enough.



J. A. Blackburn and E. A. Gerod, State Mine Inspectors; J. W. Hunt, Associate Professor in Charge of Mining Extension, Penna. State College and R. E. George, State Mine Inspector.

• The Manufacturers Division of the American Mining Congress, in their annual meeting May 5 at Cincinnati, elected as their new chairman John P. Courtright, president and general manager of Marion Power Shovel Company of Marion, Ohio.

Mr. Courtright also was reelected to the Division's Board of Governors for a three-year period. He served the group as vice chairman last year.



JOHN P. COURTRIGHT

OPERATING EXPERIENCE WITH THE MCCARTHY COAL RECOVERY DRILL

(Continued from Page 18)

the ash of the coal. For instance, a drill operating in the East Ohio No. 7 soft coal can readily penetrate to depths of 120 feet with 70 horse power gasoline motor, but in the hard sulphur coals of Southern Indiana the same drill with the same motor will bore only 60 feet.

In our opinion the owner of a strip pit should exercise care in his decision as to the proper size drill to recover his coal. He should carefully determine the lowest thickness of the coal, how level the coal lies to the right and left and if there are any rolls forward and back in the vein. The proper size auger should be determined by the amount of clean coal remaining in his vein after he deducts any bands or the usual poor coal at the top and bottom of some veins. A safe rule in most cases is to employ augers 8" to 12" less in diameter than the thickness of the coal. Thus you bore out the heart of the good coal and leave the coal of poor quality in the pit. The quality of coal recovered by auger drilling will run much higher than strip mine coal.

The average recovery is running from 50 to 70 per cent of the coal drilled. The variable is caused by the contours of the hills and the amount of pillar that has to be left standing for support of the overburden.

Two types of drilling heads are commonly used. One type, the slack head, produces 1½" slack with a small percentage up to 3". The slack head consists of a pilot cutter extending several inches ahead of the three main cutter arms. Between the pilot cutter and the three main cutter arms three stub cutter arms enlarge the hole cut by the pilot cutter. Thirty-two replaceable chisel point borium tipped bits are used in the standard tipped head. The other type, the lump head or core barrel type head, produces about a carload of lump for every carload of slack. Many times the lumps are too big and the size of the lump is controlled by the position of the burster in the center of the core barrel. The larger the diameter of the core barrel the more lump will be obtained. We have found it to be true that each strip pit drills differently. We modify the core barrel type head and burster to suit the local conditions to obtain the best results, whereas the slack head works uniformly in all pits.

The core barrel type head consists of a barrel the diameter of the auger with tungsten bits set in its edge to cut a kerf for sufficient clearance. In the center of the core barrel is a pilot head and behind the pilot head can be placed a variety of different bursters. The barrel cuts a doughnut of coal then the burster enters the doughnut, breaking it into lumps. Originally core barrels were about 2 feet long. More and more experience taught us that the longer core barrels attached to the first section of auger drilled straighter holes, so now we recommend that the core barrel and first auger be built integral for a total length of 8 feet.

A skilled operator can produce more coal per day than a poor operator. He has the feel of the machine and if the augers and heads start raising in the vein he can slow down his speed and rotate the augers until the proper direction is obtained. In the same way, if the augers tend to dip he can increase the feed and rotate the auger faster, giving the machine more speed. One instance we know where an operator was able to advance over a roll by speeding up and slowing down the machine to suit the condition.

To quote a few examples of machines in operation—near Salineville, Ohio, a McCarthy 24" Coal Recovery Drill powered by a Ford 254 motor and using 24" x 6 foot augers, is averaging 112 foot holes and producing 90 tons of coal per day. Hauling the coal to the cars and operating the drill requires three men or an average of 30 tons per day per man. This machine was originally designed to bore 50 to 60 feet but the operator soon found they could drill further. Daily we are surprised at the new records obtained.

Another example in Eastern Ohio, at Germano, is a firm that produces 1175 tons of coal from 42 holes 124 feet deep in seven days with 36" diameter augers. They employ three men to drill so they produce 55 tons per man per day in 44" to 46" coal. This machine is powered with a four cylinder General Motors Diesel engine. Again this machine was recommended to drill 84 feet.

No doubt your interest lies in what new model of Coal Recovery Drills we are producing. At the present time we have in operation a 42"-48" Coal Recovery Drill, employing 42" augers 12 foot long.

Originally we built this machine on caterpillar treads but found that the machine could be moved readily on rails. We have installed hydraulic lift for the augers and hydraulic jacks for leveling the machine. Holes have been bored 144 feet day after day.

Another machine that we are building for strip operations that have a wide bench, at least 40 feet in width, is a 36" Coal Recovery Drill employing 24 feet long augers. This machine will be ideal in coal seams that are 48" thick. Instead of retrieving the augers one at a time as you drill the second hole, the augers can be retrieved when the hole is completed and handled hydraulically in an overhead rack.

Very definitely we find each class of machine has its place in various strip pits. The greater percentage of machines will always be the shorter Recovery Drills employing 6 foot auger equipment, owing to the narrow berms or benches of most pits. We note here that our best operations are always the best managed jobs. They have the correct auxiliary equipment to make the drilling a success; that is, the pit is properly drained, the bench is clean and prepared ahead of the drilling and the proper conveyor is used for the size of the machine. Like all other jobs, good management pays off in added tons per day.

It is interesting to note the pounds of coal per foot of auger for the various diameters. They are as follows:

24" Auger	259 pounds per foot.
30" Auger	390 pounds per foot.
36" Auger	565 pounds per foot.
42" Auger	830 pounds per foot.
48" Auger	1010 pounds per foot.

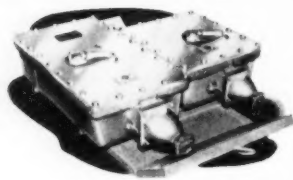
From these figures it is realized that various horse power motors are needed for Recovery Drills. Our machines weigh from 6000 pounds to 24,000 pounds without the auger equipment, and use 60 to 170 horse power motors.

In manufacturing our drills we use the best alloy steels in the auger tubing, shanks, sockets, gears and transmissions. We endeavor at all times to over-power and over-build our drills to insure the proper factor of safety.

In conclusion, Coal Recovery Drilling salvages many tons of coal otherwise lost, and in addition brings this coal to market at a low cost to the operator. Coal Recovery Drills are economical, labor-saving and highly productive.

ENSIGN

Permissible
DISTRIBUTION
BOXES
FOR *Safety*



Photograph illustrates a two-circuit K.G. Permissible Box which would be suitable for installation with cutting machines and drills. Boxes are approved for 250 and 550 volts D. C.—220 and 440 volts A. C.

ELIMINATE CABLE FIRES AND MODERNIZE YOUR POWER DISTRIBUTION

● Ensign Distribution Boxes incorporate many exclusive electrical features designed to give safety and protection to your electrical system. Among these is Ensign's exclusive Safety Plug which permits disengaging under load. All parts are renewable.

● Boxes incorporate three-pole De-Ion circuit breakers with shunt trip attachments for tripping breaker, plus ground current limiting device built into breaker.

● Any combination of circuits may be provided. Failure of power supply does not trip breaker when shunt trip attachment is used—saving many man hours. No circuit is broken outside the enclosure.

SCHROEDER BROTHERS

3116 PENN AVENUE
PITTSBURGH 1, PA.

EXPRESS 1-1571

● Appointment of A. F. Siers as sales manager of the motor coach engine division of Fageol Products Company, Kent, Ohio, was announced today by L. J. Fageol, president.



A. F. SIERS

A veteran of 35 years in the automotive industry, Mr. Siers will be in charge of sales of Fageol and Fageol-Leyland Engines to bus, truck and industrial users of engines. Fageol Products Company, a subsidiary of Twin Coach Company, recently made its com-

plete line of Fageol Gasoline and Propane Engines and Fageol-Leyland Diesel Engines available to all bus builders.

Mr. Siers began his automotive career in 1918 with the old Pierce-Arrow Motor Car Co. His experience also includes service with Gottfredson Truck Co., Timken Detroit Axel Company, General Motors, A.C.F.-Brill Co. and Pesco Products Co. Prior to joining Fageol Products, he was for six years chief engineer in charge of intercity bus production and experimental development for General American Aerocoach Co., East Chicago.

Mr. Siers is a member of The Society of Automotive Engineers, the American Ordinance Association of Motor Bus Operators.

Prevention and Control of Fire Hazards in Belt Conveyor Installations

(Continued from Page 16)

case, because in many mines the principle of mining one side on advance and the other side on retreat can be adopted without any sacrifice of economy or production and at the same time it will make pos-

REALLY CLEANS SHOWER STALLS



—WHERE ORDINARY CLEANERS
AND HARD RUBBING FAIL



"Bull Frog"
SAF-T-KLENZ

Removes rust stains, lime deposits, soap, oil, body grease and algae formation. Practically slip-proof. Minimizes conditions that breed and spread infectious germs. Simply sprinkle Saf-T-Klenz powder on damp surface, mop lightly and flush with clear water. Harmless to hands, clothing, floor, drains. Odorless.

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Invited

sible the limiting of air requirements to reasonable volumes.

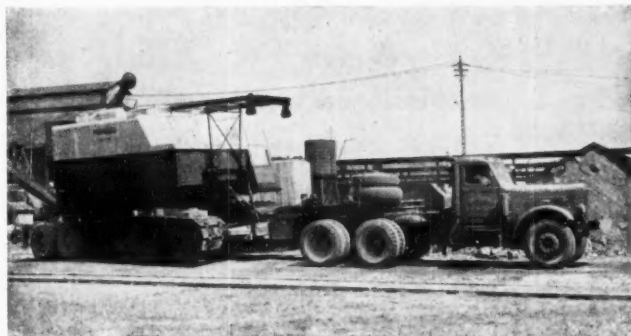
Admittedly, as with most schemes that are thoroughly planned and carefully executed the ventilation plan described here for belt installations is initially more expensive than haphazard and poorly maintained systems, but in case of a belt fire its adoption would pay dividends in the saving of human lives and property and in helping to control and extinguish the fire.

As has been demonstrated, numerous factors enter into the prevention and control of fire hazards in belt conveyor installations. The highly inflammable materials used in the construction of belts, the dangerous accumulation of dust and

grease at vital points, the many points of friction, the hazards of the roof, the easy non-alignment of the belt, the menace of short circuits and many other ever-lurking dangers to life and equipment must be guarded against at all times.

The proper installation and inspection of belts, the removal of oil and grease at vital points, training of the belt, efficient wiring, safety switches, adequate supply of rock dust, water, proper ventilation, and telephones installed, as well as many other factors, all of utmost importance in the guarding of human life, must be carried out and adhered to rigidly to reduce fire hazards.

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1—1937 Marion Combination Diesel Shovel w/ rebuilt Waukesha Model 6ELH Diesel engine, electric starting, 2 c.y. bucket. Completely rebuilt and not used since rebuilding.

1—1937 Marion Combination Diesel Shovel w/ new Waukesha Model WAKDU Diesel engine w/ gasoline starting engine, 2 c.y. bucket. Completely rebuilt and not used since rebuilding.

80' Dragline boom.

1—1944 Lorain Shovel & Dragline Model 820, w/ D13 000 Caterpillar engine, 2 1/2 c.y. bucket. Excellent rebuilt condition.

COMPRESSORS

1—Ingersoll Rand Compressor Model HK 500, w/ 6WAKA 58C engine.

1—315 Schramm Compressor Model UD18.

1—210 Schramm Compressor

PUMPS

1—4" Rex Pump—40M.

1—6" Rex Pump—90M, mounted on 2 steel wheels.

1—3" Rex Pump—20M.

TRUCKS

1—1948 GMC Diesel Truck, 3 ton Model ADCW974 flat bed w/ winch, 228 wheel base, tandem rear axle.

2—1948 Sterling Trucks, Model 115DD, 4 wheel drive, engine Model 6RKR gasoline, 16 ton, flat beds.

6—Sterling Trucks, Model 147HC, w/ Waukesha engines Model 6RKR gasoline, 9 c.y. truck level bodies without sideboards. Several rear ends. Three used Sterling motors. Three factory rebuilt.

MISCELLANEOUS

1—4" Gorman Rupp Model 1405 mounted on Trailer.

1—Ingersoll Rand 25 lb. Jackhammer—1" steel.

3—Ingersoll Rand 55 lb. Jackhammers.

1—Ingersoll Rand J84 Jackhammer, 1 1/2" steel.

1—Fairbanks-Morse Diesel, 2 cycle, HE10 Slow Speed, about 250 H.P., 6 cylinder.

1—LeTourneau Tournadator Model C, w/ 180 H.P. Buda Diesel Engine mounted on four pneumatic tires.

1—Rome Grader Model 404, w/ Hercules engine.

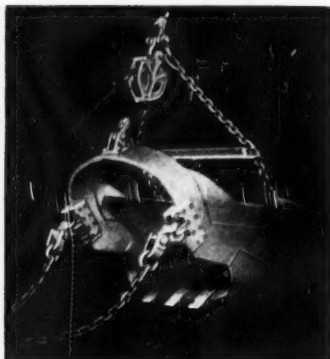
3—Hardsagg Coal Drills.

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• George Roberts, Division Superintendent, Johnstown Division, Bethlehem Mines Corporation, retired June 1 after 54 years in the coal mining industry, the last 25 of which were spent in the employ of Bethlehem. During his long career he had worked a number of seams in three different states.

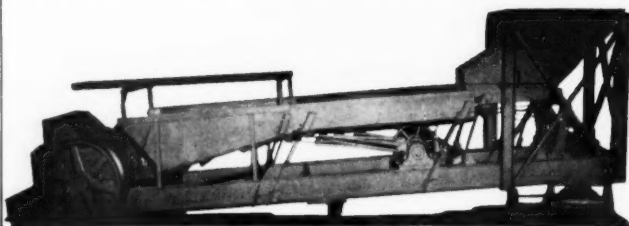
Mr. Roberts is succeeded by R. H. Ross who has been with Bethlehem since 1924, in various supervisory capacities, the last ten years as Assistant Superintendent of the Johnstown Division, comprising Rosedale No. 72 and Franklin Nos. 73 and 74 mines.

• Marion Power Shovel Company, of Marion, Ohio, elected three new officers headed by John P. Courtright as president and general manager at the annual meeting in April.

Mr. Courtright, with the company since 1927, has been executive vice-president and formerly was sales manager. He succeeds Harvey T. Gracely, forced by illness to assume an inactive status except for possible special assignments. J. Malcolm Strelitz, Marion attorney and industrialist, was elected chairman of the board.

Other new officers are Adrien F.

**PORTABLE
COAL PREPARATION UNITS**



(Patent Pending)

• Comprised of hopper, feeder, screen, picking table and single roll crusher. Capacity—125 or 150 tons per hour. Large heavy-duty Timken double-row roller bearings in the eccentrics and pillow blocks. Over-size Torrington spherical roller bearings in the crusher. The crushers are adjustable from 3/4" to 10" opening. Screened coal over the picking table is diverted by a flap-gate to the crusher or mixed with the slack for mine-run. The screen has a snappy action, resulting in efficient screening.

The picking table has a smooth motion which allows selective picking of the impurities which are disposed of in the trough running over the center of the picking table.

The unit is equipped with magnetic starters and push-button controls, 10 to 15 HP motor on the crusher, 5 HP motor on the screen and picking table. It can be readily transported from one location to another on a standard long-wheelbase truck, with minimum cost for moving and erecting.

When used in conjunction with a belt or chain conveyor, the unit can be adapted to various arrangements for handling the coal from the trucks or mine cars, through the cleaning unit, to the railroad cars or bins.

The use of oversized anti-friction bearings throughout these two unit sizes insures trouble-free operation, with low power and maintenance costs. Full information upon request.

{ Also — SINGLE ROLL COAL CRUSHERS • • • }
{ SHAKER FEEDERS • • • BELT CONVEYORS }

RIDGE EQUIPMENT COMPANY

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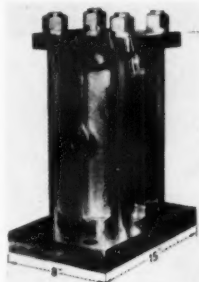
Busick, Jr., vice-president in charge of engineering, and Maurice V. Cornell, vice-president in charge of sales. David E. Rizer was named assistant to the president in matters pertaining to sales and service.

• Cannon Vibrator Company announces that a new 5 in. vibrator has been added to their line of end-mounted "Quiet-Type" Vibrators.

Said to be the largest end-mounted pneumatic vibrator made, this new Cannon EM-5-HQ vibrator weighs 180 lbs. Its 55 lb. piston has a stroke of $1\frac{1}{2}$ in. and operates at a maximum rate of 650 strokes per minute at an operating pressure of 80 psi. Air-cushioned operation eliminates metal-to-metal pounding for semi-noiseless operation. It is claimed that this feature keeps maintenance at a minimum, that all vibrator parts will last indefinitely since stress causing fatigue failure has been eliminated. The manufacturer stated that by using an extra long stroke, this vibrator sets up a reaction in the entire vibrator assembly thus creating an effective, long amplitude vibration. He further stated that the new 5 in. vibrator was designed for use on large storage bins with a capacity of 75 tons or more.

The body has a hard, chrome-

plated cylinder wall. Hardened steel piston is centerless ground to precision tolerances. Mounting plate has convenient, slotted bolt holes for easy, quick mounting or remov-



al. It is recommended that four $1\frac{1}{2}$ in. bolts be used to secure vibrator body to mounting plate.

Full information on the new Cannon EM-5-QH vibrator is available on request to Cannon Vibrator Company, 1111 Power Avenue, Cleveland 14, Ohio.

• Jack Donahoe has joined Long Super Mine Car Co., Inc., as Sales Engineer, according to an announcement by J. B. Long, president of the company.

A native of West Virginia, Mr.

Donahoe attended Morris Harvey College and West Virginia University. Prior to World War II, he was employed by the New River Company. He served in the Army for $5\frac{1}{2}$ years as an infantry officer, and, upon his discharge, became manager of the Donahoe Electric Company—a position he held until coming with the Long organization.

Long Super Mine Car Co., with headquarters in Oak Hill, W. Va., are designers and manufacturers of all types of chain conveyors, Superflite chain, "Whispering Joint"



JACK DONAHOE

pans; and are the developers and manufacturers of Long Piggyback Conveyors for continuous haulage mining.

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CORE DRILLING

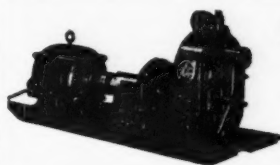
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Drills holes faster—Will not snap off shank or chip points—Outlasts four or five ordinary augers.

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WOOD TAMPING POLES

For Tamping Explosive Shots: Poles are round made of Hardwood. Sizes to 10 ft. long.

1" Dia.	8¢ per lineal ft.
1 1/4" Dia.	12¢ per lineal ft.
1 1/2" Dia.	14¢ per lineal ft.
1 3/4" Dia.	16¢ per lineal ft.
1 7/8" Dia.	18¢ per lineal ft.
2" Dia.	20¢ per lineal ft.
2 1/4" Dia.	24¢ per lineal ft.
2 1/2" Dia.	32¢ per lineal ft.

Special diameters and lengths can be furnished. These Poles meet the requirements of the New Federal Mine Safety Code.

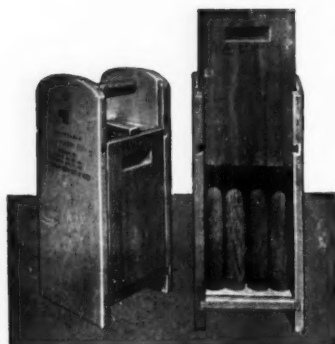


SECTIONAL TAMPING POLES

These Poles are made of straight grained wood and are coupled together with removable wood pins held in place in recessed grooves by a rubber band and can be quickly connected and unconnected.

Couplers and Head Blocks are 4, 5, and 6 inches in diameter. Please specify size when ordering. Poles are 1 1/2 inches in diameter.

Head Blocks 4" Dia.	\$1.70 Ea.
Couplers 4" Dia.	3.90 Ea.
Poles 12 ft. long 1 1/2" Dia.	3.60 Ea.
Poles 14 ft. long 1 1/2" Dia.	4.20 Ea.
Poles 16 ft. long 1 1/2" Dia.	4.80 Ea.
Poles 18 ft. long 1 1/2" Dia.	5.40 Ea.
Poles 20 ft. long 1 1/2" Dia.	6.00 Ea.
Poles 22 ft. long 1 1/2" Dia.	6.60 Ea.
Poles 24 ft. long 1 1/2" Dia.	7.20 Ea.



EXPLOSIVE BOXES: Made entirely of wood having no metal parts, tongue grooved and dovetailed construction with automatic lock using a rubber band for a spring, treated with paraffin to make moisture resistant. "Approved by the Pennsylvania Department of Mines." Sizes as listed based on 1 1/2" x 8" sticks.

Powder Box Prices are as follows:

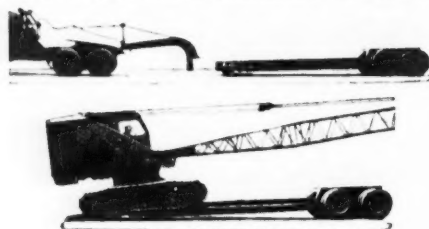
No. 9 Powder Box	\$2.55 Ea.	No. 25 Powder Box	\$5.10 Ea.
No. 12 Powder Box	2.95 Ea.	No. 36 Powder Box	6.50 Ea.
No. 16 Powder Box	3.45 Ea.	No. 50 Powder Box	7.60 Ea.
No. 20 Powder Box	3.90 Ea.	No. 72 Powder Box	8.70 Ea.

Detonator Box Prices are as follows:

No. 6 size 2 1/2" x 3" x 6" inside	\$2.15 Ea.	No. 8 size 2" x 2 1/2" x 8" inside	\$2.15 Ea.
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TALBERT trailer features are:

- ✓ Easier to Load
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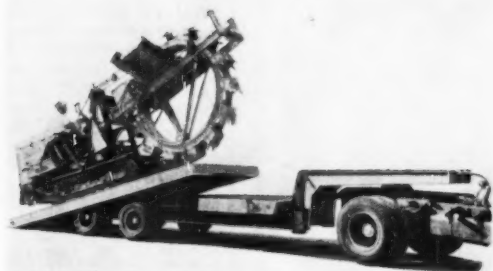
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Mine Supply Company**
CONNELLVILLE PENNSYLVANIA

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• A new heavy-duty trailer with tilting platform, for transporting heavy machinery with standard fifth wheel tractors, has just been announced by La Crosse Trailer Corporation, La Crosse, Wis. The trailer is easily loaded or unloaded in 5 minutes by one man, without skids or blocking.

Available in 14, 18 and 22 ton ca-

capacity, the new Model GTTA trailer is of tandem axle design, with 96 in. width platform, which tilts into loading position by releasing simple lock at front of platform. Two double-acting hydraulic cylinders "cushion" load during tilting. After load is driven or winched into place, platform locks automatically in horizontal position for hauling.

• John T. Weber has been named Manager—Sales Department, Cummins Engine Company, Inc., Columbus, Indiana, succeeding Howard P. Sharp, who resigned recently.

In announcing the appointment, L. W. Beck, Cummins' Vice President—Sales, indicated that Weber's duties will include the coordination of the Company's advertising, technical literature, market research, sales training and publicity programs.



JOHN T. WEBER

Weber joined the Cummins organization in October, 1947, and had served as Assistant to the Controller, until his new appointment. He is a native of St. Louis, Missouri, holds a Bachelor of Science Degree in Business Administration from Washington University, St. Louis. Weber also has a Master of Arts Degree in Business Administration

from Harvard Graduate School of Business Administration, Boston.

During World War II, Weber was a Naval aviator and was separated from service with the rank of Lieutenant, Senior Grade. He is married and has two children, a son and a daughter.

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Motors 220/440 v. or 2200 v.—3 hp., 60 cy.

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1	200	Westinghouse	720
2	200	Westinghouse	1200
1	100	Westinghouse	700
1	100	General Electric	900
1	100	Westinghouse	600
1	100	General Electric	1800
1	100	Reliance	680
1	100	Delco	1200
2	90	Westinghouse	680
4	75	Westinghouse	720
1	75	Westinghouse	1200
1	60	Westinghouse	1200
1 NEW	50	General Electric	1800
3	40	Westinghouse	900
2	30	Westinghouse	720

125 V. DC M.G. Sets
 1—100 kw. G.E. 125 v. 900 rpm. 220/440 v.
 3 ph. 60 cy. AC Syn.
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- 1-92.5 KVA 75 KW AC 220 440 Volts 3 Phase Caterpillar D13000 Diesel Electric Set.
- 1-50 KVA 40 KW AC 220 Volt 3 Phase Buda Diesel Electric Set.
- 3-100 KW DC 250 Volt Buda Diesel Generator Set.
- 1-30 KW 125 Volt DC Buda Diesel Generator Set.
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- 3-5 KW 115 Volt DC Kohler Gasoline Generator Sets.

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1950 International-LF 190 tandem dump truck; aux. transmission; A-1 condition. Good tires. Price \$7,500.
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1	KW. Make	1200
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1	175 G.E.	700
3 NEW	135 G.E.	1150
1	125 West.	550
1	125 Allis-Chal.	1150
1	110 West.	700
1	100 Allis-Chal.	1150
1	75 West.	750
1	40 G.E.	720

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200—1½ ton Hand Cranked mto 27:1 thru an enclosed double reduction gear unit with 4 planetary gears mounted on steel plate complete with 48' of ¼" cable, ratchet type brake, push button release.

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100—Brand New with ¼" cable, 1½ and 2 ton A.C. or D.C. Motors.

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100 KW. Diesel Engine Generator Sets
 11—100 KW, 250/275 v. D.C. Delco Generators dir. con. to 150 H.P., Model GBD-8, 5½ x 7, 8 cyl. Superior Diesel Engines, electric starting with muffler, power panel and accessories.

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 Armatures L. 400—35-B—Goodman 50 H.P. Jeffrey 35-B and Goodman Machine Trucks.
 2 AC Motors 150 H.P. for Mine Fan.
 Goodman Conveyor G-12½ and G-20 and Parts.
 Goodman 512 Shortwall and 124-AA Top Cutter.
 Joy T-1 Cot Truck and 42-D Battery Shuttle car.
 Joy 5-SC and KMC Shuttle Car 31 in. high.
 50 H.P. Slope Hoist complete GE control.
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 2-DSS Diesel Engine and 8 ton Loco 42 Ga.
 Joy 11RV Cutting Machine
 Joy 65C Cable Shuttle Car
 Joy MTR-30 in. Belt Conveyor 2000 ft. (subj. prior sale)

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Say You Saw It in Coal Mining**1 Motor Generator Set DC**

100KW GE 125-250V. type CD 1200 RPM, 150 HP GE type KT motor 1200 RPM-3 60 2200 Mounted on common base with controls. Used in excellent condition. Price \$4995.00. Altoona, Pa.

1 Diesel Generator Set

37½KW Century 3 60 220-115V taps. IHC Diesel, gas start. Complete self contained unit. Used in Al condition. Price \$2250.00. Altoona, Pa.

1 Centrifugal Pump

4250GPM-85 Hd., Fairbanks Morse, direct connected to FM motor, 125HP-900RPM-3 60 2200 with starting equipment. Used very little—new condition.

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Western Knapp Mobil Mill Magnetic process. Rated 60-75 tons feed per hour. 7' diameter cone. 2 Dings magnetic separators. 9" inside airlift.

All motors, pumps and switch gear complete.

1—6 x 14 R-7-Flo double deck Allis Chalmers vibrating screen, capacity 100 T.P.H., with screen cloth.

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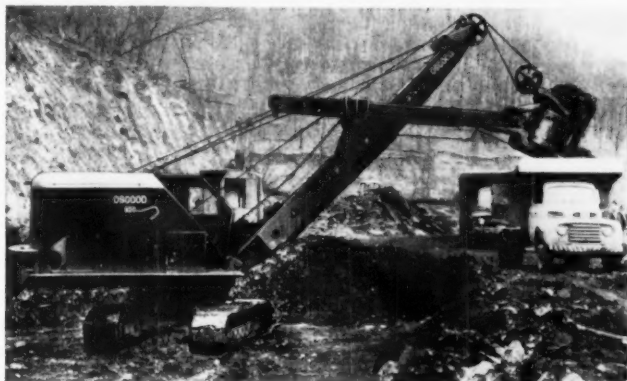
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OSGOOD



Cuts loading costs at strip mines

Mine after mine reports loading costs down and profits up when OSGOOD Air-Controlled Shovels go on the job. Digging and loading cycle is accelerated . . . trucks are filled with record speed . . . maintenance is negligible.

Photo shows a Model 820 owned by the Zimnox Coal Co. of Steubenville, Ohio. This machine is equipped with the famous OSGOOD Air Cushion Clutches that assure the smoothest operation since steam and eliminate the many daily time-consuming adjustments necessary on other machines. It has a 26-ft. boom, 20-ft. handle, 1 1/2-cu. yd. dipper, 13-ft. 5-in. crawler, and 31-in. tread. Shovel adapts quickly to dragline, crane, clamshell, or hoe. Write OSGOOD today for more information.

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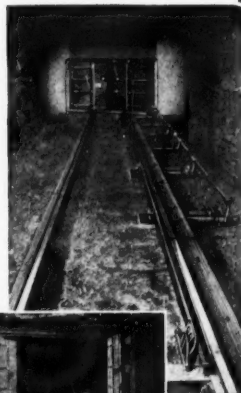
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Engineered flow of air sweeps out gas pockets, and air flow must be continuous, reliably directed by "Canton" Automatic Doors. Dissipating explosive air is one important function. Providing healthy, breathable air is another function that steps up productivity of every worker. Eliminating that trapper boy accident is another.

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"CANTON" DOORS ARE SELF LIQUIDATING IN A SHORT PERIOD

Note the photos ... when the oncoming train rides the trip levers ... flip, the doors open; when the last car passes ... release, the doors spring shut ... positive action and reaction ... all mechanical in split seconds. Complete literature sent on request, engineering advice given without obligation. When writing, please use street and zone number.



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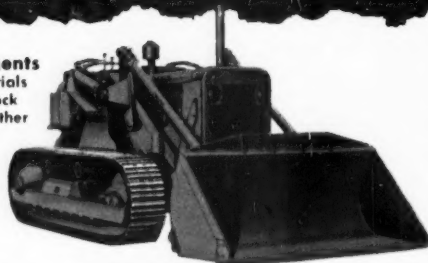
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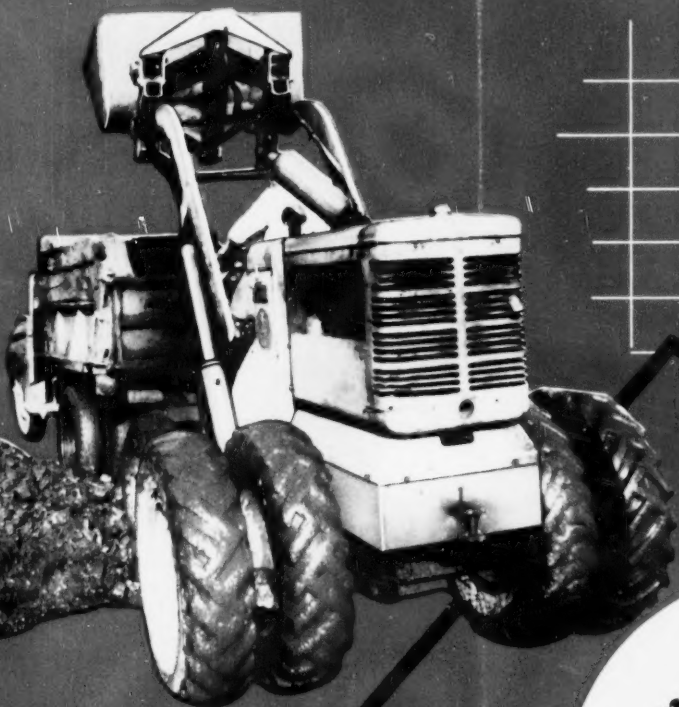


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